

CLAIMS

What is claimed is:

1 1. A method of routing a data flow traversing one or more routers in an
2 internetwork, wherein the one or more routers are coupled to a plurality of service
3 provider access links, the method comprising:
4 determining a prefix for the data flow;
5 calculating a plurality of performance scores for the plurality of service provider
6 access links, each of the plurality of performance scores indicating performance of a route
7 from a router of the one or more routers to the prefix via a distinct service provider access
8 link from the plurality of service provider access links;
9 detecting a current service provider access link for the prefix, the current service
10 provider access link corresponding to a current route to the prefix specified by a routing
11 protocol, the current service provider access link having a performance score from the
12 plurality of service provider access links; and
13 selecting a new service provider access link from the plurality of service provider
14 access links for routing the data flow to the prefix, wherein the new server provider access
15 link has a performance score from the plurality of performance scores superior to the
16 performance score for the current service provider access link.

1 2. The method of claim 1, wherein the plurality of performance scores is at
2 least partially dependent upon delay measurements across the plurality of service provider
3 access links.

1 3. The method of claim 1, wherein the plurality of performance scores is at
2 least partially dependent upon jitter measurements across the plurality of service provider
3 access links.

1 4. The method of claim 1, wherein the plurality of performance scores is at
2 least partially dependent upon loss measurements across the plurality of service provider
3 access links.

1 12. The networking device of claim 11, wherein the subset of the plurality of
2 network prefixes is retrieved by the synchronous thread from the priority queue at a
3 fixed rate.

1 13. The networking device of claim 12, wherein the fixed rate is user specified.

1 14. A routing intelligence device for controlling a plurality of routers, wherein
2 each of the plurality of routers is coupled to a plurality of service provider access links
3 (SPALs), such that each of the plurality of routers is coupled to a distinct subset of the
4 plurality of service provider access links, the routing intelligence device comprising:
5 an internal database, the internal database including a plurality of records
6 including:
7 a key field storing one or more network prefixes;
8 a service provider access link field storing one or more identifiers for one
9 or more current service provider access links from the plurality of service provider access
10 links for linking the plurality of routers to the one or more network prefixes;
11 an update flag indicating whether the service provider access link field was
12 recently updated; and
13 one or more performance scores for the one or more current service
14 provider access links.

1 15. The routing intelligence device of claim 14, further comprising:
2 a plurality of blades, such that each of the plurality of service provider access links
3 associates with one or more blades of the plurality of blades for measuring a performance
4 of the service provider access link.

1 16. The routing intelligence device of claim 15, further comprising:
2 one or more processes for selecting a preferred service provider access link from
3 the plurality of service provider access links, the one or more processes executed on a
4 decision blade from the plurality of blades.

1 17. The routing intelligence device of claim 15, further comprising:
2 a communication backplane, the communication backplane coupling the plurality
3 of blades.

1 18. The routing intelligence device of claim 14, further comprising:
2 a control protocol for communication between the routing intelligence device and
3 the plurality of routers.

1 19. The routing intelligence device of claim 18, wherein the control protocol is
2 iBGP.

1 20. A routing intelligence device comprising:
2 an internal database, the internal database including a plurality of records
3 including:
4 a key field storing one or more network prefixes;
5 a service provider access link field storing one or more identifiers for one
6 or more current service provider access links from a plurality of service provider access
7 links for communicating with the one or more network prefixes;
8 an update flag indicating whether the service provider access link field was
9 recently updated; and
10 one or more performance scores for the one or more current service
11 provider access links.

1 21. The routing intelligence device of claim 20, wherein the routing
2 intelligence device is in communication with the one or more service provider access links
3 via one or more routers.

1 22. The routing intelligence device of claim 20, wherein the routing
2 intelligence device is a router coupled to the one or more service provider access links